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*Colymbus* sp.—Winter. An individual seen at Attoo.

739.† *Urinator pacificus* (Lawr.) Stejn. Common. Breeding.

740.† *Urinator lumme* (Brünn.) Stejn. Abundant. Resident. Breeds.

744.† *Fratercula corniculata* (Naum.) Gray. Extremely abundant. Breeds. Not resident.

745.† *Lunda cirrhata* Pall. Extremely abundant. Breeds. Not resident.

747.† *Cyclorrhynchus psittacula* (Pall.) Stejn. Plentiful on Agattoo. Breeds. Not resident.

748.† *Simorhynchus cristatellus* (Pall.) Merrem. Plentiful. Breeds. Not resident.

749.† *Simorhynchus pygmæus* (Gmel.) Brandt. Abundant. Breeds. Not resident.

750.† *Simorhynchus pusillus* (Pall.) Schleg. Abundant. Breeds on Agattoo. Not resident.

753.† *Synthliboramphus antiquus* (Gmel.) Brandt. Abundant. Breeds. Sparingly resident.

*Brachyramphus* sp. Seen in late fall and early winter only.

761†. *Cepphus columba* Pall. Common. Breeds. Not resident.

763a.† *Uria lomvia arra* (Pall.) Ridgw. Abundant. Resident.

SMITHSONIAN INSTITUTION.

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## ON THE BREEDING HABITS OF SOME ARIZONA BIRDS.

BY W. E. D. SCOTT.

### SECOND PAPER. *Icterus cucullatus*.

THE individual taste of birds in the matter of their nests is so well exemplified by the great differentiation in the nests of the Hooded Oriole (*Icterus cucullatus*), which is a very common breeding bird in the cañon described in the former paper of this series, that I propose to give a detailed description of ten nests taken here during the past summer, and incidentally to call attention to other nests of the same species taken in regions close at hand.

The birds arrive here about the middle of April, and are to be found until the last of September, and a few even well into

October. Such, at least, was my experience during the season of 1884. They are not great songsters, but are very conspicuous, both by their plumage and by their peculiar call or rattle, which is very similar to that of the Baltimore Oriole, only it is more prolonged. Two broods are raised, and not infrequently three, during their stay here, and a new home is built for each brood. The old birds are great workers when building their nests, and the rapidity with which so elaborate a structure is completed is astonishing. Three or four days at most generally suffice to complete the structure. No detailed description of the eggs will be essential in this connection, they have been so often carefully described, and only when unusual shall I dwell upon them. Three or four is the usual number laid, though after the first set four is unusual.

The ten nests to be presently described were all taken from three kinds of trees, cottonwood, sycamore, and a kind of ash; and, considering that the location of all were not a mile apart, it would seem that taste or fancy had much to do with producing in the same locality, where the materials used by all of the builders are abundant and easily obtained, structures varying so widely in general appearance, in the materials of which they are built, and in their method of building, as well as in mode of attachment to the tree.

Some of the nests, it will be seen, are as truly pensive as those of *Icterus galbula*; others are more like those of *Icterus spurius*; while one at least rests on a stout twig and is hardly to be regarded as a hanging nest at all.

The following data are taken from the nests before me and from notes made when the nests were collected.

No. 1. Nest of May 28. In a cottonwood, forty-five feet from the ground. Contained a full set of three eggs, which were fresh and of the usual coloration. They measure  $.92 \times .60$ ,  $.92 \times .63$ , and  $.85 \times .62$ , respectively. The nest is a rather bulky structure, and is built externally of coarse green grasses, rather loosely woven, but so knitted and tied together as to form a very strong wall. The general appearance of the surface is smooth, though the contour of the whole is unsymmetrical. There is a distinct lining, which is of fine dried grasses very compactly laid together, but not woven, in parallel circles, one above the other, reaching to the rim of the nest. Just in the bottom there is one large feather of a Hawk and a little down.

The nest is attached to three main twigs at the extremity of a branch, and one of these twigs is again divided into three smaller twigs. One of the main twigs has many leaves, and is fastened to the wall of the nest for five inches, and some of the leaves are woven into the structure. A second twig is attached at a point about an inch and a half from the first to the wall of the nest for four inches, and has three leaves, all of which are fastened to the nest. The twig spoken of as being divided into three branches has a very strong band and reeving of grasses joining it to the nest just where it forks, and one branch is attached to the side of the nest for four inches, one for two, and one for one inch. Outside the greatest depth is six inches, while inside the greatest depth is three inches and a half, so that the bottom of the nest is very thick; in fact the walls are thick throughout, being fully half an inch at the rim of the nest where they are thinnest. The diameter of the inside of the nest at the top, where it is largest, is four inches, and the shape inside is that of a shallow cup.

No. 2. A nest taken the same day, and in the same kind of tree, about forty feet distant from that just described, is almost identical with it in structure. It is attached on its sides to four twigs, the attachments varying from three to five inches. It was about twelve feet from the ground and contained three fresh eggs.

No. 3. Nest of May 29. Ash tree. Thirty feet from ground. Three eggs slightly incubated. Typical. Rather a bulky, purse-shaped structure but with a very wide opening. The walls are not thick, except at the bottom of the nest, and are composed of dry yucca fibre rather loosely woven. The lining is of the same material, only finer and softer. The nest is fastened to two twigs and the clusters of leaves belonging to them. One twig is attached to the side of the nest for four inches, the other only slightly to the rim. The exterior depth is six and the interior depth four inches, and the diameter of the opening is three inches.

No. 4. Nest of the 17th of June; in an ash tree, about twenty-five feet from the ground, and contained four eggs. It is a true pensive nest and is built of yucca fibre and grasses externally, the whole very loosely put together and but slightly woven. There is a very slight lining of a few horse hairs and a little cotton-waste. The walls are thick and the opening small. The

general shape is that of a purse or pouch. The exterior depth is seven and the interior depth five inches. The opening, which is covered by leaves hanging over it, is oval, with a greater diameter of two and a half and a lesser diameter of two inches. The eggs are typical. There are a number of bits of long grasses and yucca fibers pendant from the walls outside, not having been woven into the structure.

No. 5. Nest of June 18. In a sycamore tree, twenty feet from the ground. Four typical eggs. Fresh. Closely resembles the ordinary structure of *Icterus galbula*, but is rather shallower and the opening larger. Is attached to the tree only at three points on the rim of the nest, and truly pensive. Built of same material inside and out, *i. e.*, fine dried grasses. The walls are about the same thickness throughout—about a quarter of an inch. It is very compactly woven and is symmetrical. The depth outside is three inches and inside two and three-quarter inches, and the opening has a diameter of three inches.

No. 6. Nest of June 20. Had four fresh eggs, which are smaller and less sharply pointed than typical eggs, and have the markings confined to the cluster of coloring at the larger end. They measure  $.84 \times .63$ ,  $.80 \times .65$ ,  $.86 \times .63$ , and  $.83 \times .65$ . The whole structure is very like that built ordinarily by *Icterus spurius*. Fine green grasses closely woven form the walls, and there is a lining of very fine silky dry grasses and some plant down like that from thistles. It is small and compact, having an exterior depth of three and a half and an interior depth of three inches. Opening round, and two and a half inches in diameter. There are no attachments to twigs but at the rim.

No. 7. Nest of June 25. In a sycamore, twelve feet from the ground. Outside, coarse green grasses put together much as in No. 1 (nest of May 28). It is attached from top to bottom on its sides to two twigs, the distance being four inches, and grasses are tied and woven to one of these where it extends below the structure, forming a ball an inch in diameter on which the nest partly rests. There is a third twig also slightly fastened to the nest, and three large leaves growing from the twigs are sewed to the rim of the nest for all but about an inch and a half of its circumference, forming a roof or covering, and leaving only the small space spoken of for entrance. The measurements of

the structure are: exterior depth four and interior depth two and a half inches. The shape of the interior is oval, the greater diameter being three and a half and the lesser diameter two and a quarter inches. The whole is rather bulky and unsymmetrical, and, though smoothly lined inside with fine dry grasses and cotton string, the walls outside are rough and uneven.

No. 8. Nest of July 20. Built in a sycamore, fifteen feet from the ground, and contained four eggs slightly incubated, and one fresh egg of *Molothrus ater obscurus*, which was fresh, and measures  $.75 \times .61$ . This is a true pensile nest, the shape being that of a deep purse. It is built of the same materials throughout—very fine dried grasses—and is almost concealed by several large leaves, depending from twigs close by, being ‘sewed’ to its walls outside. The walls are not at all thick, and the nest, though deep, is not bulky. The external depth is six and the internal depth five and a half inches. The greatest external diameter is three and a quarter inches, and the diameter of the opening, which is round, is two and a half inches.

No. 9. Nest of July 1. Built in a sycamore, forty-five feet from the ground. Had an incomplete set of eggs, the female having been killed before all were laid. It is a very bulky and elaborate structure, and a general view of it gives the impression of a nest sixteen or seventeen inches in depth by seven inches in diameter externally. The outside is composed of dried grasses and the blades of a small kind of yucca, also dry. There are many of these only partially woven into the structure by their smaller ends, the rest of the blade, with its broad base, being left hanging and dangling. These blades are about sixteen inches long, are from one-half to three-quarters of an inch broad at the base, and gradually taper to a sharp point. Only half of the length is woven into the nest. It is truly pensile and the interior is of about the average size, the walls being loosely woven and very thick. The lining is of fine dried grasses and a little cotton. Outside the nest proper is eight and a half inches deep, but appears, from the dangling yucca blades, twice that depth. The greatest external diameter of the nest proper is six inches, though from the yucca blades this, too, appears larger. At one point from the rim a sort of rope of grasses is woven to attach it to a twig rather more than five inches above. The interior diameter is three and a quarter inches at the opening of the nest,

where it is largest, and the interior depth is three and a half inches.

No. 10. Second nest of July 20. Built in a sycamore, twenty-five feet from the ground. Three fresh eggs, which are unusual in being short and very much rounded. One is unfortunately broken; the others measure  $.78 \times .62$ , and  $.84 \times .63$ , respectively. A branch running out from the tree, so as to be almost parallel with the surface of the ground, has, near its extremity, three twigs that point downward. The middle one of these is about five inches from either of the others. There is little or no attempt to draw these together, and as the nest is attached to all three twigs the structure is a peculiar one. The nest proper is between two of these twigs, and about four inches below the branch. The middle twig, on which the structure mainly depends, crosses the nest at an angle, and being slightly curved reaches under and across the bottom of the nest, supporting it, and protrudes beyond. For all the distance where the nest touches it, it is firmly tied and sewed fast, and where it is again free from the structure there is a ball of tightly woven grasses like that described in the nest of May 28. One of the outside twigs, running parallel to the one just spoken of, is fastened to the wall of the nest for four inches. As these twigs are almost on opposite sides of the nest, it is so far very symmetrical, and, being composed externally of green grasses, it reminds one strongly of the nest of *Icterus spurius*. But the builders, apparently not content with the fastenings, now built a sort of rope or stay of grasses which, reaching slightly upward and to the third of the twigs mentioned, is fastened to some leaves and firmly to the twig itself. This brace is rather more than five inches long and about an inch thick, though slightly flattened. The inside of the nest is beautifully lined with woven yucca fiber and soft dried grasses. Outside it is nearly four inches deep, and inside but two and a half inches deep. The opening is oval, one diameter being two and a half and the other three and a half inches. A large leaf depending from one of the twigs is sewed tightly to the rim so nearly all the way round, and forming so complete a roof or covering, that difficulty was experienced in taking the eggs from the nest.

This completes the description of *all* of the nests, ten in number, taken in the cañon proper; a word as to some

other nests of this species, found at but a short distance away, will complete the record of nests observed. At a point on a cactus desert, about a mile from where most of the nests enumerated were taken, I found a nest of this species built on the trunk or stem of a yucca about eight feet from the ground. It contained young birds almost ready to leave the nest. The trunks of many of the yuccas are covered with dead leaves hanging downward, and this nest, which is a cup-like structure, built of green grasses closely woven, is placed on the *outside* of the dried leaves and is only attached to one of them. It is rather more than three inches deep, and is attached to a single leaf for this distance. No leaves cover it or conceal it, and the general appearance is that of a cup resting against the trunk of a tree with no apparent attachment to it.

In the mesquite regions about Tucson the nests are frequently built in the mistletoe that grows plentifully on that tree. These nests are generally symmetrical, shallow cups in shape, and are almost always semi-pensile.



ON *BUTEO HARLANI* (AUD.) AND *B. COOPERI*  
CASS.

BY ROBERT RIDGWAY.

SINCE the publication in 'The Auk,' for July, 1884 (pp. 253, 254), of the article suggesting the possible identity of these two birds, the National Museum has purchased from Mr. G. H. Ragsdale, of Gainesville, Texas, a specimen which proves conclusively that *B. harlani* has, like *B. borealis* and *B. swainsoni*, a light-colored phase, but at the same time, unfortunately, does not dispose of the question of *B. cooperi*. The recently acquired specimen, which is undoubtedly *B. harlani*, is even decidedly lighter in color than *B. cooperi*, the tail being almost wholly white, as are also the upper coverts, while the scapulars and wing-coverts have a much greater amount of light spotting. Notwithstanding its very light colors, however, the two particularly diagnostic characters of *B. cooperi*, mentioned in the article above referred to, viz., the unusual length of the naked portion of the tarsus, in front, and the plumbeous or almost glau-